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Letter to the Editor

Appendicectomy as an index procedure to train junior surgical trainees in an era of reduced working hours

1. Introduction

Appendicectomy has traditionally been the model for training the junior trainee surgeons. It provides an excellent opportunity to learn generic surgical skills early in the training. The surgical curriculum published by UK intercollegiate specialty curriculum programme (ISCP) requires trainees to demonstrate level-4 competence (knows specifically and broadly) in appendicectomy at the end of the core training.[1] However, there are growing concerns about the operative exposure of surgical trainees in an era of reduced working hours following implementation of European working time directive (EWTD).[2]

We undertook a small audit to determine the exposure of core surgical trainees (CST) to emergency appendicectomy in a UK district general hospital. Trainees at this hospital work in shift system on EWTD compliant rota. The audit was approved by trust clinical audit department and included all appendicectomies performed over a five-months period. Patients' case notes were reviewed to determine the involvement of CST in emergency appendicectomy. For the purpose of this study, the first operating surgeon was defined as the operating surgeon. Data on the procedural and outcome variables were extracted.

2. Results

All 50 patients included in final analysis were clinically diagnosed with acute appendicitis preoperatively. There were 32 males and the median age was 24 years (range: 8–71 years).

Of 50 appendicectomies, 54% ($n = 27$) were performed by open and 30% ($n = 15$) by laparoscopic approach. The remaining 16% ($n = 8$) were started laparoscopically but had to be converted to an open operation. Laparoscopic to open conversion rate was 34%. Fig. 1 shows the operative exposure of CST, performing the least number of appendicectomies (16%, $n = 8$). Registrars were the operating surgeons in most of the operations (60%, $n = 30$), followed by consultants (24%, $n = 12$).

Subgroup analysis by operative approach showed that out of 27 open appendicectomies, registrars performed most operations (63%, $n = 17$), followed by CST (22%, $n = 6$) and consultants (15%, $n = 4$). When appendicectomy was started by laparoscopic approach (23/50), proportion of operations performed by registrars, CST and consultants were 56% ($n = 13$), 9% ($n = 2$), and 35% ($n = 8$), respectively. Histological diagnosis of appendicitis was confirmed in 88%, thereby giving a negative appendicectomy rate of 12%. Median length of stay was 2 days (range: 1–10 days). Three patients (6%) developed post-operative complications which included one each of ileus, pelvic abscess and chest infection.

3. Discussion

Appendicectomy is one of the first procedures performed by a junior surgical trainee and remains at the forefront of teaching surgical skills. It has been suggested that the trainees performing 50% of appendicectomies develop competence in this procedure.[2] However, our results show only 16% of appendicectomies are being performed by CST, the proportion rising to 22% for open procedures. Current operative experience of CST is clearly suboptimal. Our audit also found that consultants were principal surgeons in a considerable number of cases, most probably reflecting the need to help new registrars with insufficient operative experience as CST. Implementation of EWTD has severely indented the amount of operative experience gained in two years of core surgical training (formerly called basic surgical training). Rotas compliant with EWTD have been shown to hamper training opportunities and are preventing trainees from achieving training milestones. The impact of EWTD has widely been discussed in this context.[3]

In the UK, individual training is delivered within ISCP training framework. This framework provides each trainee with an opportunity to formulate a learning agreement for each training placement with assigned educational supervisor (AES). Additionally, a personal development plan is maintained by trainees, outlining the training needs and the means used to develop the required skills. An interim meeting between trainee and AES provides opportunity to monitor the progress and address concerns, and the final meeting of the placement is meant to record whether educational objectives have been achieved. A trainee can demonstrate competence in surgical procedures by completing sDOPS [surgical directly observed procedural skills] or PBA [procedure based assessment] assessments. With the concerns surrounding operative exposure of CST, above training structure should be carefully followed to ensure the trainee makes most of the limited training opportunities. The role of AES is pivotal in ensuring the trainee develops skills and competence as stipulated in learning agreement.

There is a strong argument to improve the way training is delivered within the training time constraints. Task is challenging, however, achievable. Various strategies can be adopted to maximize training opportunities within reduced training time. Surgical skills development can be enhanced within clinical environment by restructuring of services, by provision of dedicated training theater lists, and by providing focused training as per trainee's requirement.

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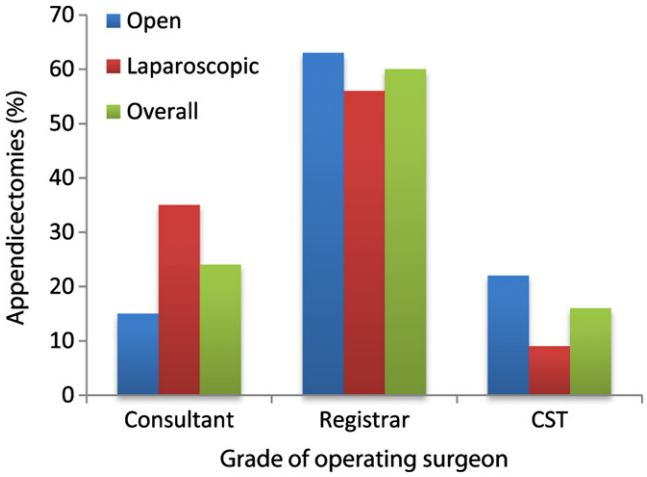

Fig. 1. Principal surgeons performing appendicectomies.

In non-clinical setting, surgical simulation and wet lab training provide reasonable means to acquire surgical skills.

Current training environment has significant potential to produce competent surgeons. We suggest use of full potential of the ISCP training framework, focusing on individual training, and making the best use of available training opportunities. We strongly recommend implementing the strategies to maximize operative experience. The onus is on us to protect the training standards of current age surgical trainees. Similar ways should be explored to enhance operative exposure of surgical trainees elsewhere on the globe suffering reduction in training times.

Conflicts of interest

None declared.

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Ethical approval

Not applicable.

Author contribution

Sajid Mehmood: Study design, Data collection, data analysis, writing.

Jamil Ahmed: Study design, Data collection.

Saima Anwar: Data collection, contributor.

Shafiq Rehman: Data collection, contributor.

Naif El-Barghouti: Supervisor, contributor.

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Sajid Mehmood*, Jamil Ahmed, Saima Anwar, Shafiq Ur Rehman, Naif El-Barghouti

Department of General Surgery, Scarborough General Hospital, Scarborough and North East Yorkshire NHS Trust, Scarborough, United Kingdom

* Corresponding author. Academic Surgical Unit, Castle Hill Hospital, Hull and East Yorkshire NHS Trust, Hull, East Yorkshire HU16 5 JQ, United Kingdom.
Tel.: +44 1482622393; fax: +44 1482623274.
E-mail address: drsajidm@hotmail.com (S. Mehmood)

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